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| **Lesson Title: Technology Integration in Mathematics** |
| **Subject area / course / grade level: 4th Grade Math** |
| **Introduction: Students have been exposed to basic algebraic concepts. This lesson will apply the order of operations to mathematical expressions, through the use of technology. This lesson will be completed after TCAP testing, as we move into an introduction of the 5th grade standards.** |
| **Lesson Length: 1 hour** |
| **Materials: bread, lunch meat, lettuce, mayo/mustard, plastic butter knife, smart board, ELMO camera, Index cards with sequencing activity printed on them, calculator.** |
| **Lesson Overview: This lesson will explore the importance of the order of operations in mathematics.** |
| **Tennessee Standards:**  **GLE 0506.3.1 Understand and use order of operations.**  **GLE 0506.3.2 Develop and apply the concept of variable.**  **SPI 0506.3.1 Evaluate algebraic expressions involving decimals and fractions using order of operations.** |
| **Lesson objective(s):**   1. **The students will develop an understanding of the importance of order of operations.** 2. **The students will correctly identify the order of operations.** 3. **The students will apply the order of operations to numerical expressions.** |
| **ENGAGEMENT**   * Students will be asked to give directions to make a sandwich. Observations will be made about what will happen when steps are done in the correct order. * Students will learn and participate in an order of operations cheer to verbalize and engage the students in each step. |
| **EXPLORATION**   * Students will begin by placing cards with different activities in order that the tasks should be completed. * Students will complete various numerical expressions using the order of operations. * Using the smartboard, students will complete problems on the board. * Using calculators, students will explore the difference between using order of operations and working left to right. |
| **EXPLANATION**   * Through a group discussion, we will revisit the importance of doing tasks in order. * This time will be used for students to ask questions, so that any confusion can be clarified. |
| **ELABORATION**   * Students will have to give directions to a classmate to complete a task, stressing the importance of the order of operations. * Students will solve problems where order of operations is necessary for homework that week. |
| **EVALUATION**   * Students will write a reflection in their math folder, listing the correct order of operations. They will also be asked to solve one “exit problem” as a wrap up to the lesson. |